## **CLAIMS**

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- 1. Method in connection with the production of mechanical pulp from a cellulose containing material, wherein the material is processed in at least one refining step to produce pulp and wherein the pulp is fractionated (4), after a first refining step (1), in order to separate primary fines (5) from the pulp, c h a r a c t e r i s e d i n that said separated primary fines (5) are led away from the pulp production.
- 2. Method according to claim 1, c h a r a c t e r i s e d i n that said first refining step (1) is adapted to achieve a high freeness in the pulp, preferably at least 500 ml CSF, and even more preferred 600-800 ml CSF, and to yield a primary fines content of 3-15 %, preferably 5-10 %, in the pulp.
- 3. Method according to claim 1 or 2, characterised in that at least a part of said pulp is processed in a second refining step (10, 13), preferably after said fractionation (4), whereby secondary fines are produced in the pulp.
- 4. Method according to any of the preceding claims, c h a r a c t e r i s e d in that said pulp is subjected to a treatment step (2) after said first refining step (1), but before said fractionation (4), in which treatment step (2) the pulp is subjected to one or more of the treatments dilution, temperature enhancement, mechanical agitation and retention time.
- 5. Method according to any of the preceding claims, c h a r a c t e r i s e d i n that said fractionation (4) is performed by screening, preferably in at least one curved screen,
  or by centrifugation, preferably in at least one cyclone.
  - 6. Method according to any of the preceding claims, characterised in that said fractionation (4) is performed in at least two steps.
- 7. Method according to any of the preceding claims, characterised in that 3-15 %, preferably 5-10 % of said pulp, measured as dry weight, is separated from said pulp in said fractionation (4).
- 8. Method according to any of the preceding claims, characterised in that said separated, led away primary fines (5) are used for heat recovery, for cattle-food or in another line for pulp, paper or paperboard production.

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- 9. Method according to any of the preceding claims, characterised in that the pulp is subjected to bleaching, preferably peroxide bleaching, after the refining (1, 13) and fractionation steps (4).
- 5 10. Method according to any of the preceding claims, characterised in that said pulp is CTMP, CMP, TMP or HTCTMP.

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- 11. Method according to any of the preceding claims, characterised in that said produced mechanical pulp is used in the production of paperboard, preferably paperboard intended for food or liquid related applications.
- 12. Mechanical pulp from a cellulose containing material, characterised in that it is produced according to any of claims 1-11.

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13. Paperboard, at least partly produced from a mechanical pulp from a cellulose containing material, characterised in that said pulp is produced according to any of claims 1-11.